

WHAT IS CLAIMED IS:

1. A data representation and retrieval method, comprising the following steps of:

5 providing a primary data file which stores a large volume of recorded data where a location of each piece of recorded data is represented by an offset value;

providing a secondary data file which stores supplemental data for assisting to search and retrieve the recorded data from the primary data file;

10 accessing the secondary data file to retrieve supplemental data corresponding to search data specified by a user; and

15 accessing the primary data file at locations specified by offset values derived from the supplemental data and retrieving the recorded data therefrom.

2. A data representation and retrieval method as defined in Claim 1, wherein said supplemental data for each search data in the secondary data file includes a number of
20 counts of the recorded data carrying the search data, and offset values showing locations of the recorded data carrying the search data in the primary data file.

3. A data representation and retrieval method as defined in Claim 1, wherein said supplemental data for each
25 search data in the secondary data file includes a number of counts of the recorded data carrying the search data, and a first offset value showing a first location of the recorded data carrying the search data in the primary data file, and flag data showing whether or not the recorded data carrying
30 the search data are consecutively located in the primary data file.

4. A data representation and retrieval method as defined in Claim 1, wherein said recorded data in the primary data file are arranged in an alpha-numeric order.

5. A data representation and retrieval method as defined in Claim 1, wherein said search data is a string of alphabetical and numeral characters, and wherein said supplemental data for each search data is established in advance in the secondary data file.

6. A data representation and retrieval method as defined in Claim 1, wherein said step of accessing the primary data file includes a step of generating offset data based on the supplemental data from the secondary data file for accessing and retrieving the recorded data from the primary data file.

7. A data representation and retrieval method as defined in Claim 3, wherein said flag data further shows a number of consecutive locations when the recorded data carrying the search data are consecutively located in the primary data file, and a difference of offset values between a current location of the recorded data and a next recorded data in the primary data file.

8. A data representation and retrieval method as defined in Claim 6, wherein said step of generating the offset data includes a step of consecutively incrementing the offset data by a minimum incrementing step or jumping a difference of offset values based on the supplemental data.

9. A data representation and retrieval method as defined in Claim 2, wherein each of said offset values is described by four-byte data.

10. A data representation and retrieval method as defined in Claim 3, wherein said first offset value is described by four-byte data and said flag data is described by two-byte data, and wherein a most significant bit of the two-byte data shows whether or not the recorded data carrying the search data are consecutively located in the primary data file.

11. A data representation and retrieval apparatus, comprising:

a primary data file which stores a large volume of recorded data where a location of each piece of recorded data is represented by an offset value;

5 a secondary data file which stores supplemental data for assisting to search and retrieve the recorded data from the primary data file;

means for accessing the secondary data file to retrieve supplemental data corresponding to search data specified by a user; and

10 means for accessing the primary data file at locations specified by offset values derived from the supplemental data and retrieving the recorded data therefrom.

12. A data representation and retrieval apparatus as
15 defined in Claim 11, wherein said supplemental data for each search data in the secondary data file includes a number of counts of the recorded data carrying the search data, and offset values showing locations of the recorded data carrying the search data in the primary data file.

20 13. A data representation and retrieval apparatus as defined in Claim 11, wherein said supplemental data for each search data in the secondary data file includes a number of counts of the recorded data carrying the search data, and a first offset value showing a first location of the recorded
25 data carrying the search data in the primary data file, and flag data showing whether or not the recorded data carrying the search data are consecutively located in the primary data file.

30 14. A data representation and retrieval apparatus as defined in Claim 11, wherein said recorded data in the primary data file are arranged in an alpha-numeric order.

15. A data representation and retrieval apparatus as defined in Claim 11, wherein said search data is a string of alphabetical and numeral characters, and wherein said

supplemental data for each search data is established in advance in the secondary data file.

5 16. A data representation and retrieval apparatus as defined in Claim 11, wherein said means for accessing the primary data file includes means for generating offset data based on the supplemental data from the secondary data file for accessing and retrieving the recorded data from the primary data file.

10 17. A data representation and retrieval apparatus as defined in Claim 13, wherein said flag data further shows a number of consecutive locations when the recorded data carrying the search data are consecutively located in the primary data file, and a difference of offset values between a current location of the recorded data and a next recorded
15 data in the primary data file.

 18. A data representation and retrieval apparatus as defined in Claim 16, wherein said means for generating the offset data includes means for consecutively incrementing the offset data by a minimum incrementing step or jumping a
20 difference of offset values based on the supplemental data.

 19. A data representation and retrieval apparatus as defined in Claim 12, wherein each of said offset values is described by four-byte data.

25 20. A data representation and retrieval apparatus as defined in Claim 13, wherein said first offset value is described by four-byte data and said flag data is described by two-byte data, and wherein a most significant bit of the two-byte data shows whether or not the recorded data carrying the search data are consecutively located in the primary data
30 file.